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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,487	07/09/2001	Ho Kyoum Kim	2598/OJ593	5179
7278	7590	11/22/2004	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			BROOKE, MICHAEL S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/901,487

Applicant(s)

KIM ET AL.

Examiner

Michael S. Brooke

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) 6-20 and 22-25 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 and 21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 15 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of group 1 in the reply filed on 09/15/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 6-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 09/15/04.

### ***Specification***

The disclosure is objected to because of the following informalities:

- The specification teaches that an epoxy resin (19) molds the rear surface of the flexible PCB (16). This is not the case. Looking at Fig. 4 of the present invention, it is clear that the PCB (16) and the molded epoxy are separate elements. That is, the epoxy (19) is not part of the PCB. The epoxy part (19) is conventionally known as a "chip package."

Appropriate correction is required.

### ***Claim Objections***

Claims 1-5 and 21 are objected to because of the following informalities:

- Claim 1 recites that the image chip is seated in a hollow area formed on a surface of the PCB. This description is not accurate. The PCB (16) is illustrated in Fig. 4 and does not form the chip mounting structure. The epoxy resin (19), which is the chip mounting structure, is conventionally known as a "chip package." Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).
- Claim 3 recites that "the bonded transparent medium can be disposed therebetween." It is unclear as to what the "transparent medium" is disposed between. For the purposes of examination, the examiner will interpret this claim to mean that the transparent layer is disposed over the image sensor and the first bump.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitayama (JP 01-095553) in view of Miyazaki et al. (5,442,134).**

With respect to claims 1-4, Kitayama teaches (Fig. 2):

- a PCB (7);
- an image chip mounted in a hollow in a ceramic package (1) ;
- a transparent medium (8), made of glass, having a circuit pattern (9, 10a, 10b); and
- a first conductive bump (10a) that is connected to the chip and a second conductive bump (not numbered) that is connected to the PCB.

With respect to claim 5, this limitation is directed to the method of manufacturing the sensor and is not seen to patentably limit the structure.

Kitayama teaches the claimed invention with the exception of the epoxy resin.

Miyazaki teaches that ceramic and epoxy resin are known equivalents in the image sensor art for the purpose of forming a chip package (col. 4:5-7). Because these two materials were art recognized equivalents at the time the invention was made, one of ordinary skill in the ink jet art would have found it obvious to have provided Kitayama

Art Unit: 2853

with a package made of epoxy resin, for the purpose of supporting the image sensor chip in a known alternative manner.

**Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitayama (JP 01-095553) in view of Miyazaki et al. (5,442,134), as applied to claims 1-5 above, and further in view of Wetzel (6,268,231).**

Kitayama, as modified, teaches the claimed invention with the exception of a flexible PCB.

Wetzel teaches a low cost CCD package that uses a flexible PCB (18). The flexible PCB provides the advantages of increased versatility by allowing the assembly to be fit into small spaces (col. 4:48-52).

It would have been obvious to one of ordinary skill in the image sensor art, at the time the invention was made, to have provided Kitayama, as modified, with a flexible PCB, in order to provide a more versatile assembly, as disclosed by Wetzel.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 2853

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Brooke whose telephone number is 571 272-2142. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Brooke  
Primary Examiner  
Art Unit 2853

MSB  
11/16/04